CHAPTER 5
IMPLEMENTATION AND TESTING

5.1 Implementation

This project is about "Server Virtualization Use phpVirtualBox" used CentOS, VirtualBox, phpVirtualBox. Here is how to create server.

1. Installing CentOS 7 as server.

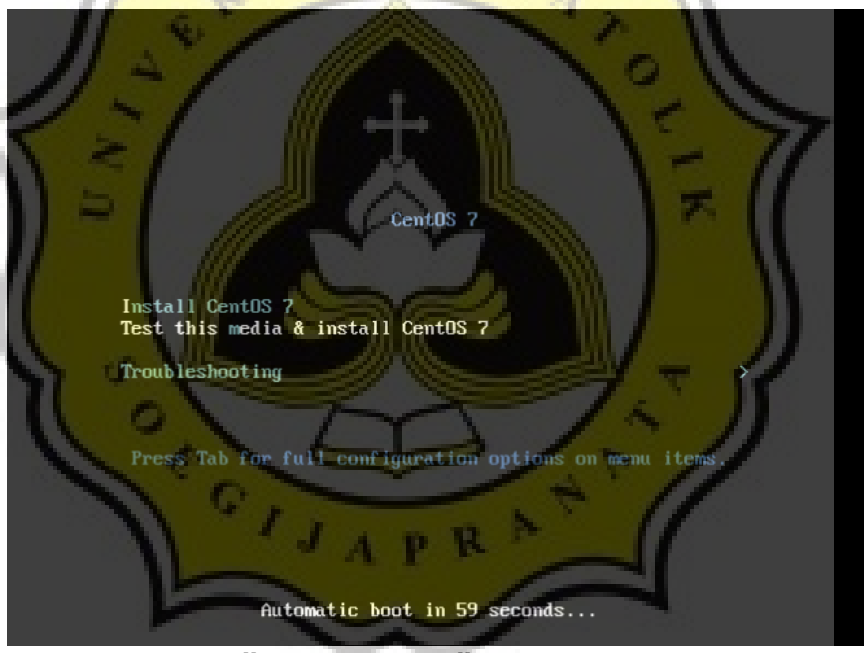

Illustration 5.1: Installation CentOS 7

2. Choose Language in Operating System.

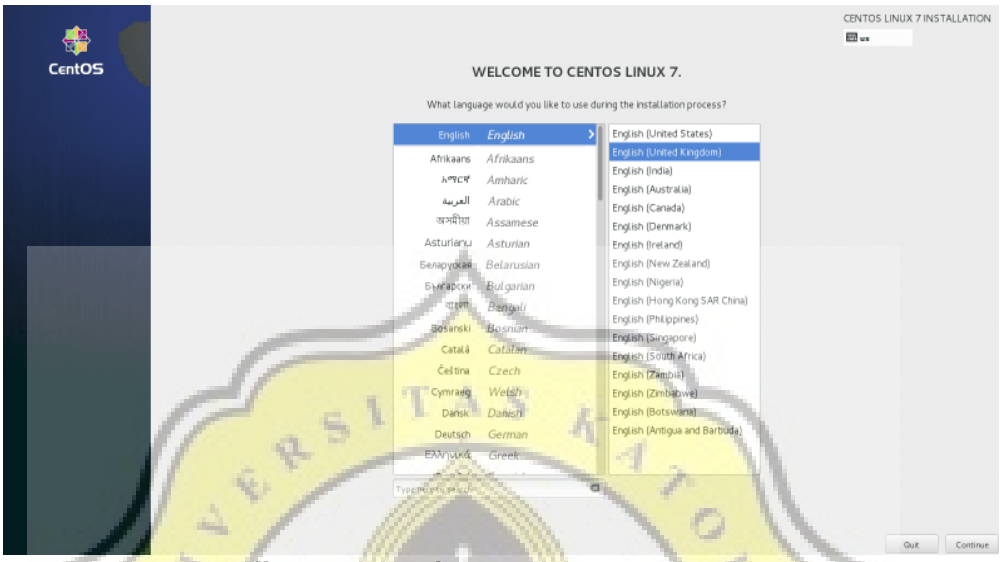

Illustration 5.2: Choose Language on CentOS 7

3. The size of harddisk partition. Specifies sizes in hard disks such as root, boot, and swap.

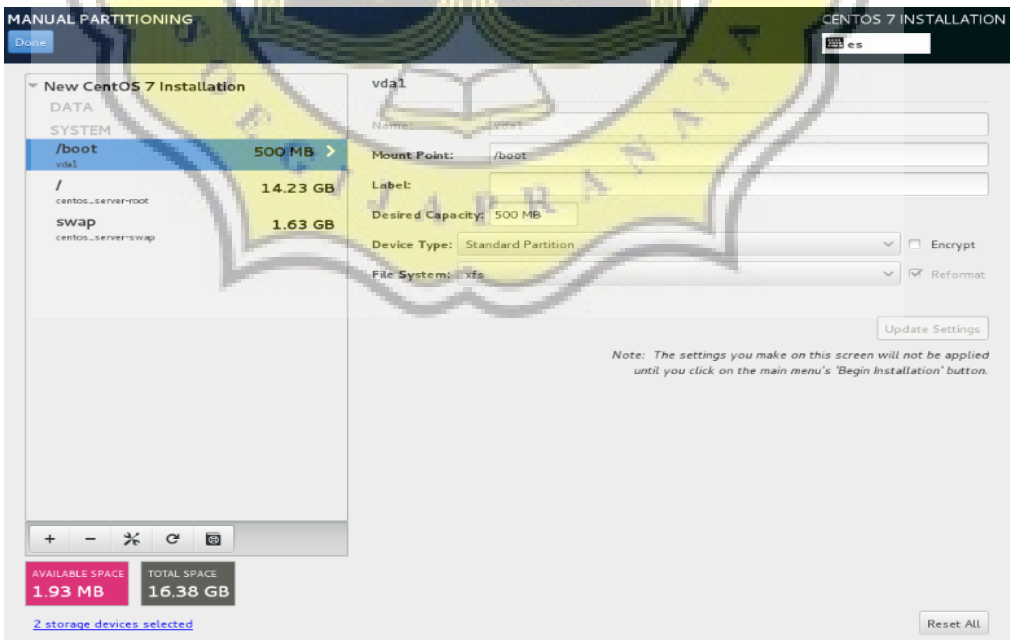

Illustration 5.3: Partition Harddisk on CentOS 7

4. Make username, root and password for CentOS 7.

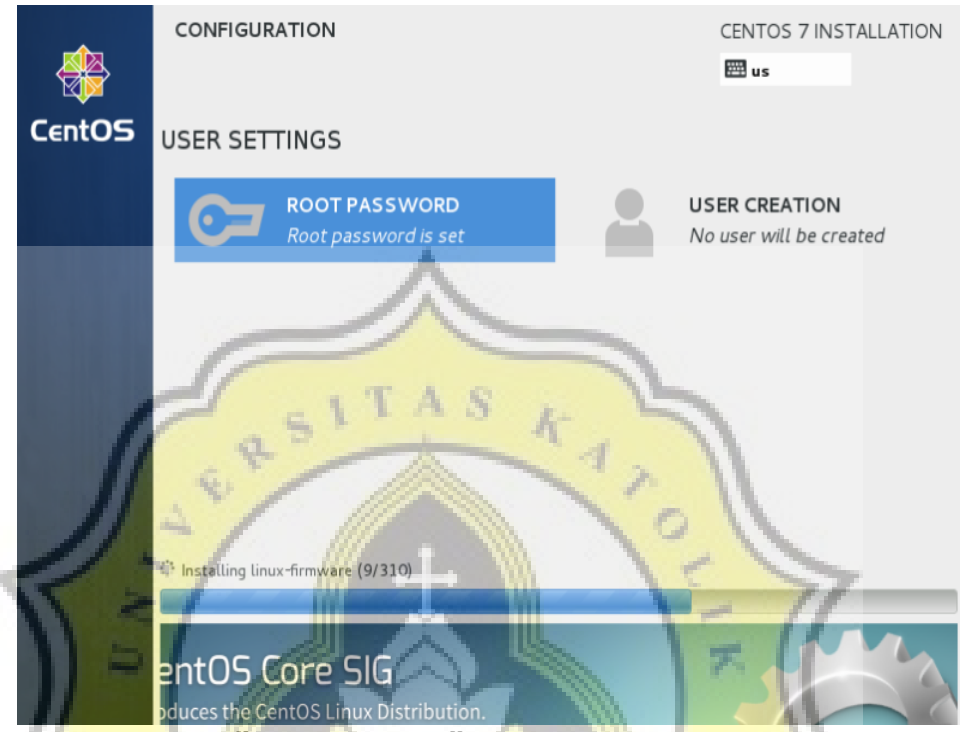

Illustration 5.4: Installation Process on CentOS 7

5. Here is the display of a CentOS 7 server.

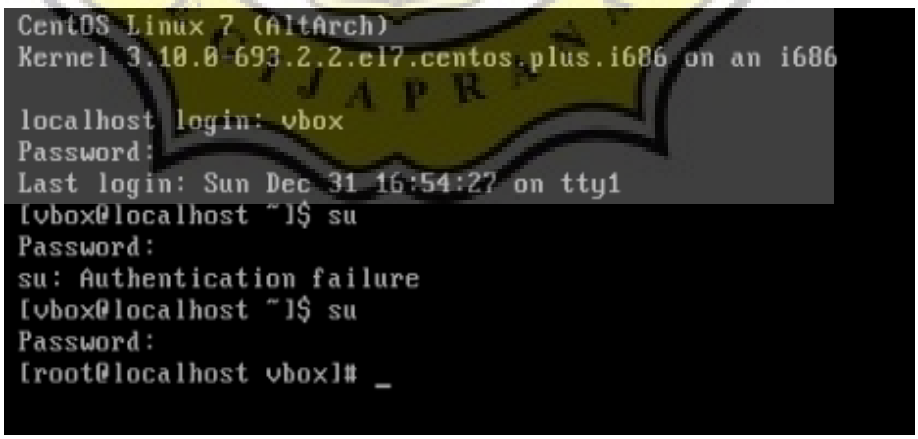

Illustration 5.5: CentOS 7 Server Display

Here's how to create a server use phpVirtualBox and setting phpVirtualBox.

1. Install the package used before creating the phpVirtualBox server.

   sudo yum install wget

   sudo yum groupinstall 'Development Tools'

   sudo yum install SDL kernel-devel kernel-headers dkms

   sudo yum install httpd php php-devel php-gd php-common php-soap

2. Create a file in the etc folder, a file called sysctl.conf. This code serves to set the type of network system control server.

   vi /etc/sysctl.conf

```
#
# For more information, see sysctl.conf(5) and sysctl.d(5).

net.ipv6.conf.all.disable_ipv6 = 1
net.ipv6.conf.default.disable_ipv6 = 1
```

Illustration 5.6: Setting Type Network ipv6

3. Restart Apache with the following this command.

   service httpd restart

4. Create a vbox folder inside the html folder with this command.

   mkdir /var/www/html/vbox

5. Create phpinfo.php file in the vbox folder.

   vi phpinfo.php

6. Here is the coding index phpinfo.php and save this file.

   <?php

   phpinfo();

   ?>

7. Download the VirtualBox package in the repo.d folder. Download VirtualBox extpack in the tmp folder. phpVirtualBox in vbox, for download use command wget.

   http://download.virtualbox.org/virtualbox/rpm/rhel/virtualbox.repo

   http://download.virtualbox.org/5.0.40/Oracle_VirtualBox_Extension_Pack- 5.0.40-115138.vbox-extpack

   http://sourveforge.net/projects/phpvirtualbox/files/phpvirtualbox-5.0-5.zip

8. Install VirtualBox and update with this command.

   yum update && yum install Virtualbox-5.0

9. Install VirtualBox_Extension on folder tmp.

   VBoxManage expack install Oracle_VirtualBox_Extension_Pack-5.0.40-115138.vbox-extpack

10. Extract phpvirtualbox with this command.

    unzip phpvirtualbox-5.0-5.zip

11. Copy the contents of this folder to the vbox folder with this command.

    cp -R * /var/www/html/vbox

12. Create file config.php on folder vbox with this command.

    This part of coding is the most important part of the server, the server could have got a different IP address.

    vi config.php

```
/* Username / Password for system user that runs VirtualBox */
var $username = 'eric';
var $password = 'bravo888';

/* SOAP URL of vboxwebsrv (not phpVirtualBox's URL) */
var $location = 'http://192.168.100.2:18083/';
```

Illustration 5.7: Configuration IP Server

13. Create file VirtualBox on folder default and save file. This file set the user's vboxweb, password, and IP server.

```
VBOXWEB_USER="eric"
VBOXWEB_PASSWD="bravo888"
VBOXWEB_TIMEOUT=0
VBOXWEB_LOGFILE="/var/log/vboxwebservice.log"
VBOXWEB_HOST="192.168.100.2"
```

Illustration 5.8: Configuration Vboxweb

14. Change file selinux from enforcing to permissive. permissive works for print warning instead of enforcing and save file.

    vi /etc/sysconfig/selinux

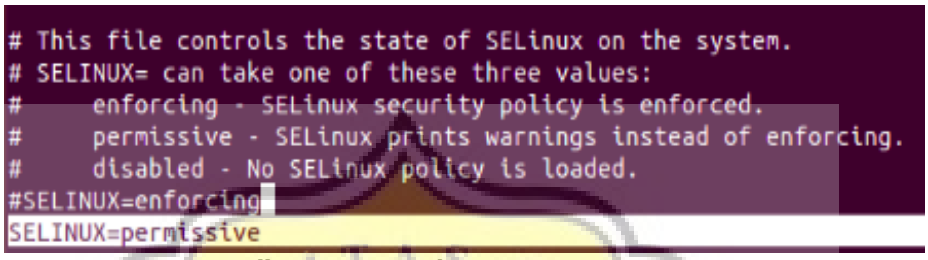

Illustration 5.9: Choose Type permissive

15. User settings VirtualBox customized username.

    usermod -aG vboxusers eric

16. Setting vboxweb.

    touch /var/log/vboxwebservice.log

17. Setting user vboxweb.

    chown eric:vboxusers /var/log/vboxwebservice.log

18. Stop vboxweb to turn off the web server service.

    systemctl stop vboxweb-service

19. Start vboxweb to turn on the web server service.

    systemctl start vboxweb-service

20. Check status web server.

    systemctl status vboxdrv

21. Turn on vboxweb configuration server.

    chkconfig vboxweb-service.on

Server settings complete. Client can already use the service made by server that is phpVirtualBox. At this stage the client does not need to do detailed configuration like the server, but all the client needs is the browser as the media link to the server address and Adobe Flash plugin for streaming phpVirtualBox. Adobe Flash plugins can be installed through the software center.

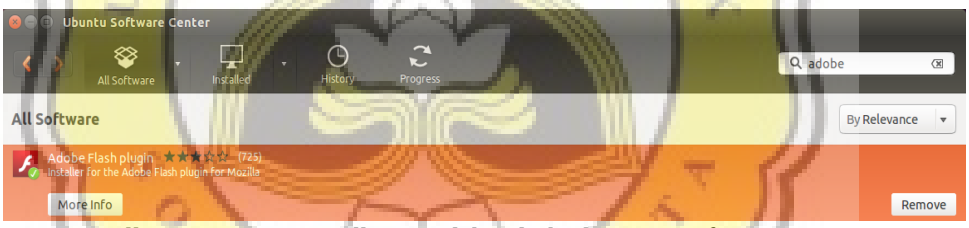

Illustration 5.10: Installation Adobe Flash Plugin on Software Center

5.2 Testing

Testing client open phpVirtualBox via browser and use phpVirtualBox.

1. Open browser from client with IP address server. Login with username admin and password admin.

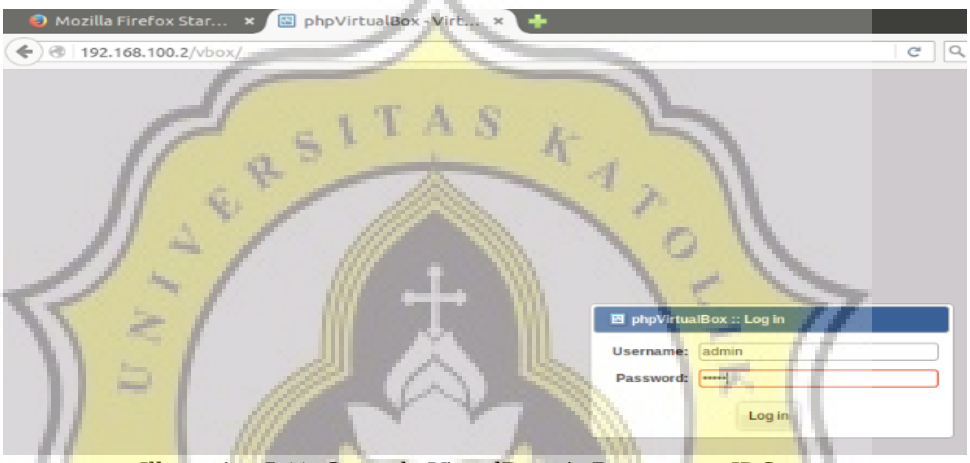

Illustration 5.11: Open phpVirtualBox via Browser use IP Server

2. The following is a phpVirtualBox application view.

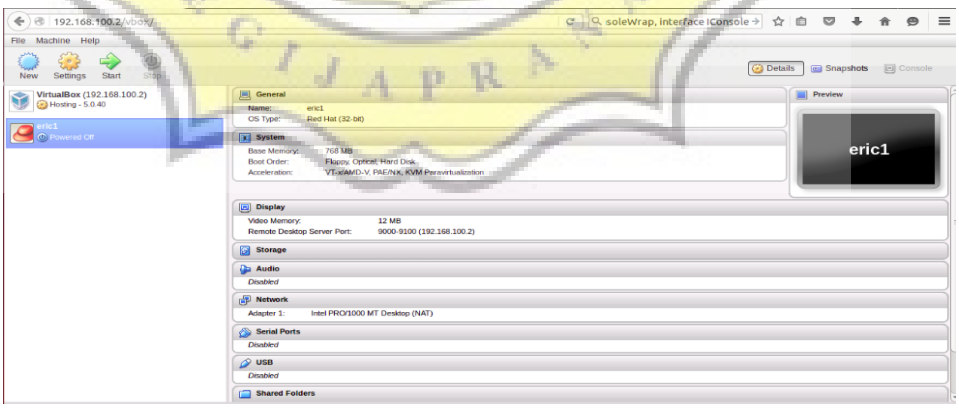

Illustration 5.12: Application phpVirtualBox

After the input username and password phpVirtualbox appear, there are several applications including the Virtual Machine menu that serves as the location of the hard disk that will diinstali OS. Start VM to run VM. Menu settings for VM configuration from display, network, etc.The following step how to create a Virtual Machine and installation OS in phpVirtualBox:

1. Click next for create name Virtual Machine. Choose linux type and red hat 32 because the OS to be used is CentOS 32-bit minimum.

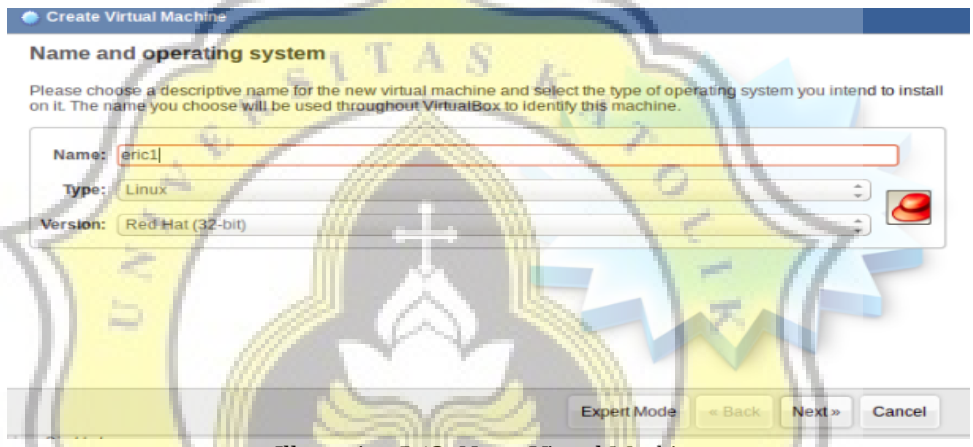

Illustration 5.13: Name Virtual Machine

2. Click next for determine size of RAM to be used CentOS 7.

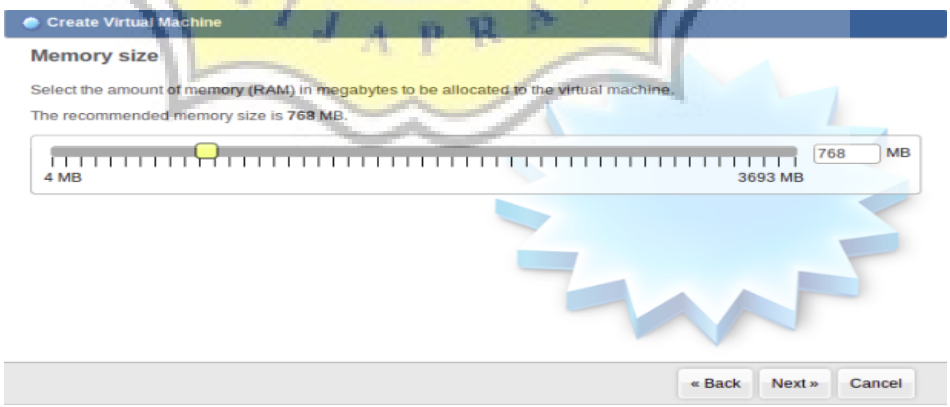

Illustration 5.14: Memory Sizes of RAM

3. Click create for creating harddisk in Virtual Machine.

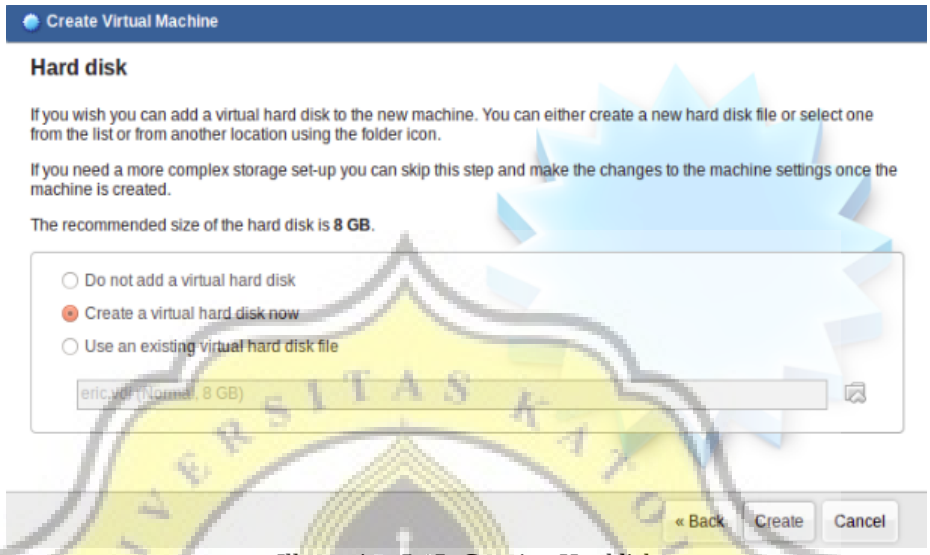

Illustration 5.15: Creating Harddisk

4. Choose VDI for harddisk file type to used because the type that will be used for later installation is ISO and click next.

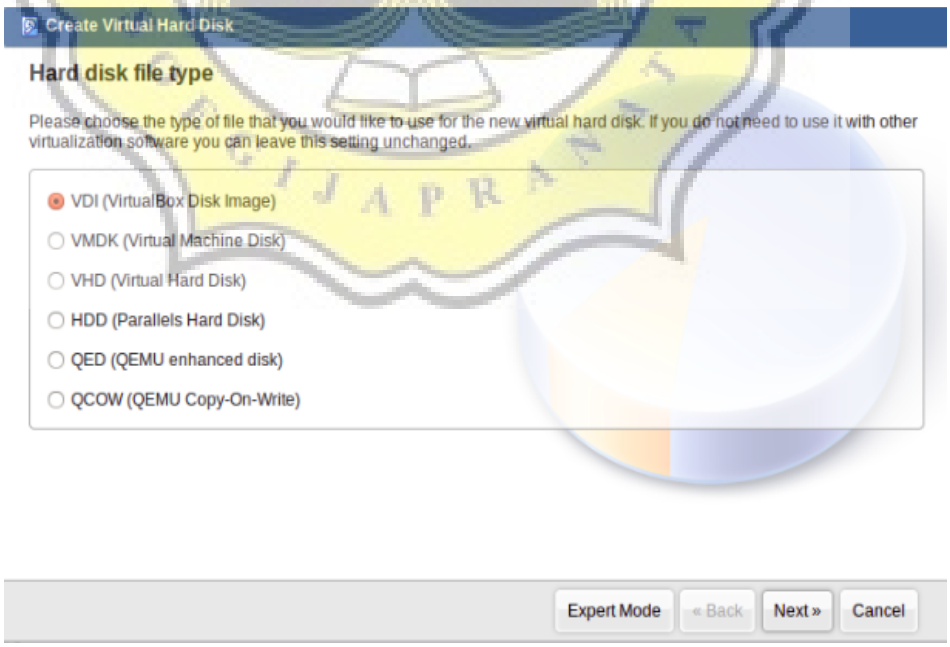

Illustration 5.16: Choose File Type VDI

5. Choose storage harddisk type Dynamically allocated and click next.

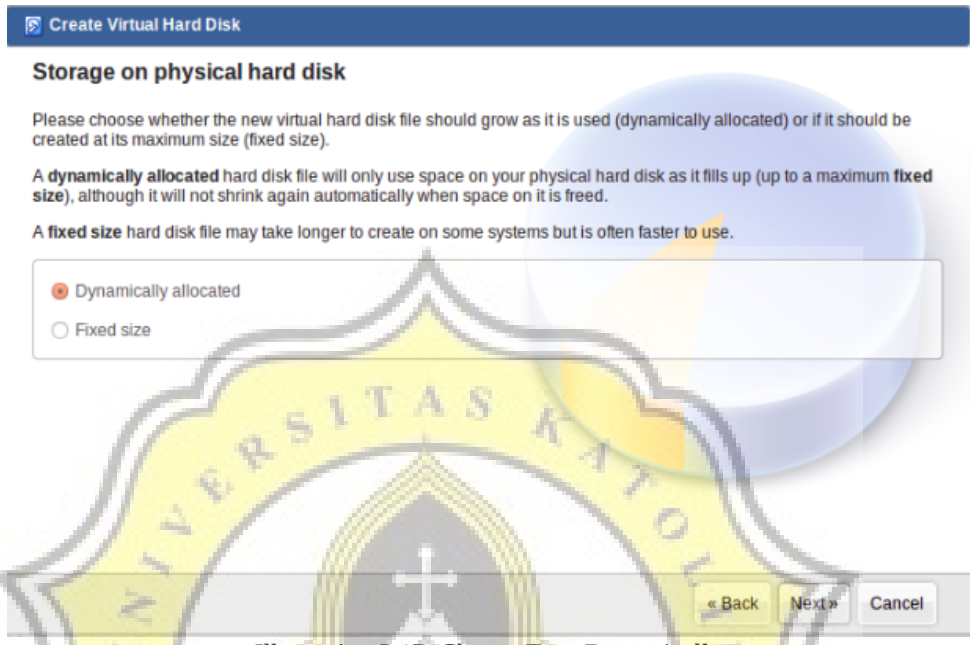

Illustration 5.17: Choose Type Dynamically

6. Determine size of harddisk and location and then create. Recommended size 8GB.

Illustration 5.18: Locatin and Size Harddisk for CentOS 7

7. Choose ISO and than Install CentOS on VM eric1.

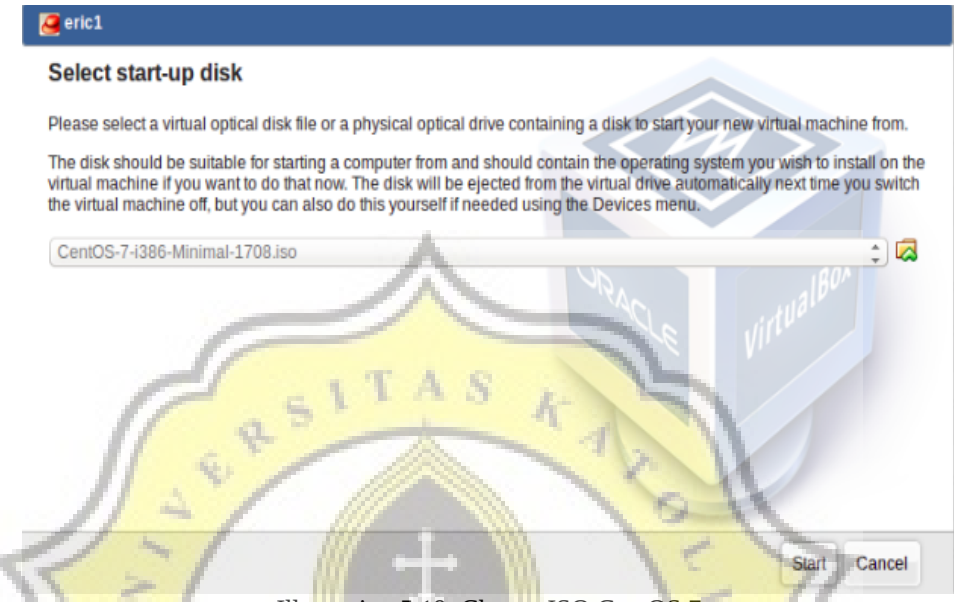

Illustration 5.19: Choose ISO CentOS 7

8. Choose language english on CentOS 7.
9. Setting autopartition click done.
10. Click accept changes for partition CentOS 7.

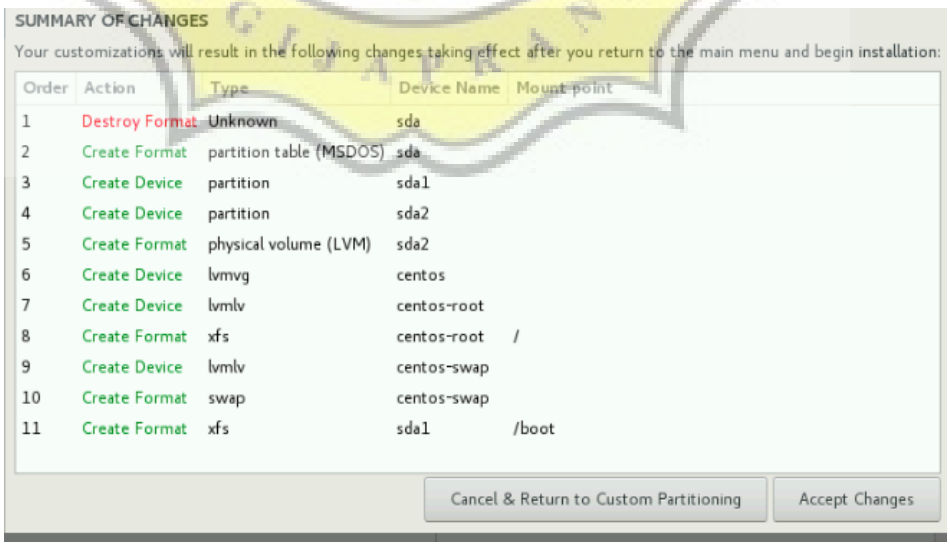

Illustration 5.20: Create Partition CentOS 7

11. Choose date and time, click done.

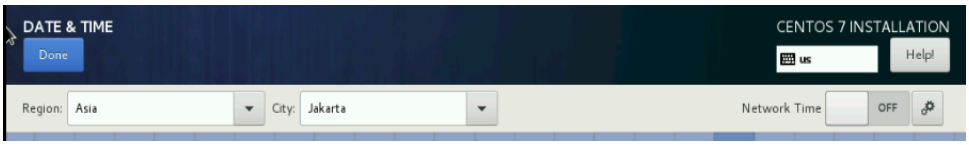

Illustration 5.21: Setting Date and Time in CentOS 7

12. Create username,root and password for CentOS 7.

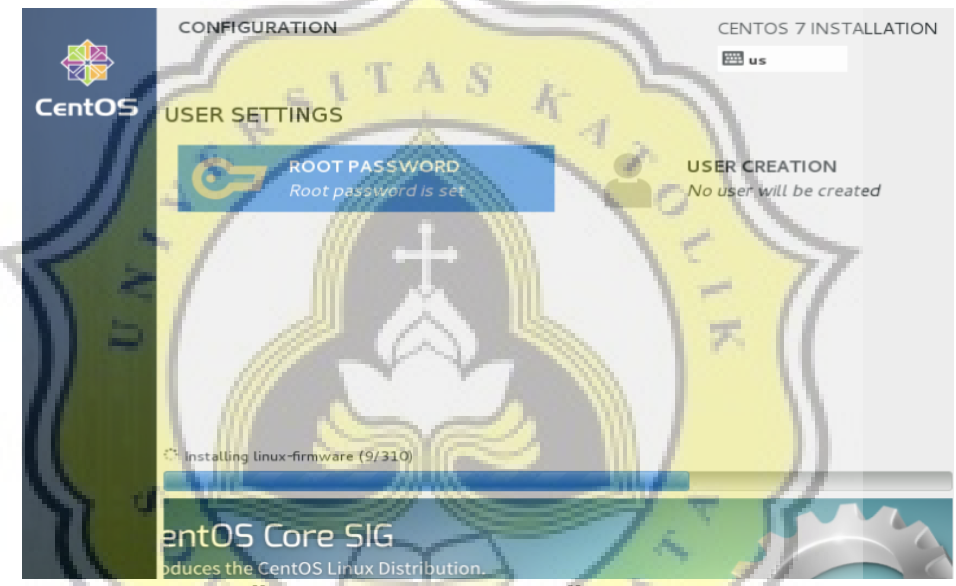

Illustration 5.22: Process Installatin CentOS 7

13. If the installation has been completed, click install and reboot system.

14. Display CenOS 7 minimal.

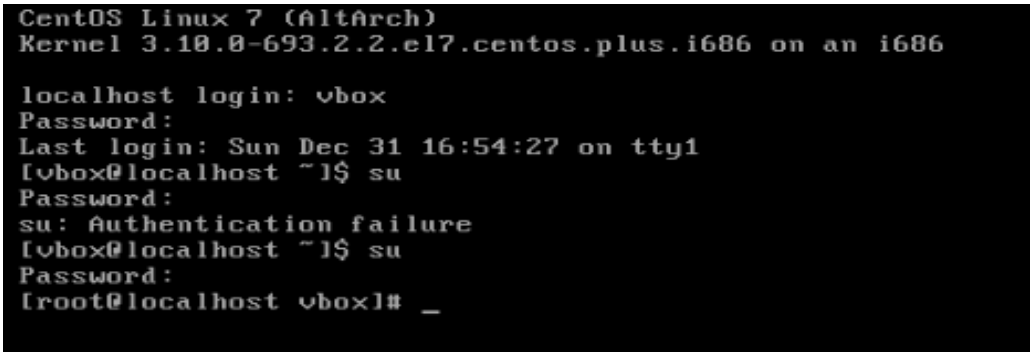

Illustration 5.23: Display CentOS 7 on phpVirtualBox

15. Installation CentOS 7 above runs on phpVirtualBox server for turn on and off the OS in phpVirtualBox via the terminal command server with this command.

16. Turn on OS from server via terminal with this command.

    VBoxManage startvm “eric1” --type headless

17. Turn off OS from server via terminal.

    VBoxManage controlvm “eric1” poweroff –type headless

```
[eric@localhost ~]$ VBoxManage startvm "eric1" --type headless
Waiting for VM "eric1" to power on...
VM "eric1" has been successfully started.
```

Illustration 5.24: Turn On VM via Terminal Command